Name of Organization: Cuyahoga Community College

Type of Organization: College or University

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Project Title: P2 Technology Demonstrations for Metal Finishers

Project Category: Pollution Prevention and Reduction - BNS

Rank by Organization (if applicable): 0

Total Funding Requested ($): 133,374 **Project Duration:** 2 Years

Abstract:

The Small Business Environmental Assistance Center at Cuyahoga Community College will conduct a series of ten pollution prevention technology demonstrations over a period of 24 months to help metal finishers in the region understand and evaluate the usefulness of these technologies in reducing the heavy metal containing wastes generated by their operations. Each demonstration will be accompanied by a seminar that will address the function, application and implementation costs of the technologies. Broad dissemination of results will be achieved through collaboration with regional P2 organizations and national industry groups.

Geographic Areas Affected by the Project

States:

- [x] Illinois
- [x] Indiana
- [x] Michigan
- [x] Minnesota
- [x] New York
- [x] Pennsylvania
- [x] Wisconsin
- [x] Ohio

Lakes:

- [ ] Superior
- [ ] Huron
- [ ] Michigan
- [ ] Erie
- [ ] Ontario
- [x] All Lakes

Geographic Initiatives:

- [ ] Greater Chicago
- [x] NE Ohio
- [ ] NW Indiana
- [ ] SE Michigan
- [ ] Lake St. Clair

Primary Affected Area of Concern: Cuyahoga River, OH

Other Affected Areas of Concern: All AOC's

For Habitat Projects Only:

Primary Affected Biodiversity Investment Area:

Other Affected Biodiversity Investment Areas:

Problem Statement:

Surface finishers are under continuing pressure to reduce the environmental impact of their operations. These operations historically generate waste waters and sludges containing heavy metals (Cu, Cd, Cr, Ni, Zn, Pb, etc). Although significant pretreatment is manditory, quantities of these heavy metals are be released either directly in waste water effluents or indirectly through leaching of contaminated sludges. These releases contribute to the environmental impairiments due to heavy metals that are evidenced in a number of the AOC's in the Great Lakes Basin

Metal finishing is a significant part of the Great Lakes economy. Significant concentrations of plating operations exist in the Milwaukee, Chicago, Detroit, Cleveland, Erie and Buffalo metropolitan areas. These finishers are predominently small businesses with limited technical and financial resources. These limited resources make it dificult for these companies to take a proactive approach to reduction or elimination of waste. While substantial number of technologies have been developed commercially to allow companies to implement pollution prevention within their operations, these companies need assistance in developing an understanding of the capabilities of these technologies and in gaining confidence that the technologies will actually perform as anticipated and in understanding how the implementation of these technologies will effect other aspects of their finishing operations.

Proposed Work Outcome:

The Small Business Environmental Assistance Center (SBEAC), a program of Cuyahoga Community College's Workforce and Economic Development Division, assists small businesses in identifying, locating and obtaining the necessary resources to operate cleanly, safely and profitably. Established in 1995 under a grant from the US Small Business Administration,The Center has engaged in training; technology demonstration; information and outreach; hazardous materials management programs; and research over the past 5 years.

As part of these overall efforts the SBEAC proposes a series of P2 Technology Demonstrations for Metal Finishers. In this program, finishers will have an opportunity to see first-hand commercially available, state-of-the-art pollution prevention processes and equipment in actual operation. Participants will also pe provided with a seminar to increase their understanding of the technology as related to the application of the equipment in industrial operations.

The Center and McGean-Rohco, Inc. have negotiated an agreement that will allow the Center to conduct techonlogy demonstrations at McGean's World Training Center located a short distance from the Cuyahoga Community College Metro Campus. This facility has 47 pilot scale tanks that can be used to perform a wide variety of metal finishing processes. The facility comes complete with state-of-the-art tank ventilation systems and a dedicated waste treatment facility to treat any effluents that may be generated as a result of the technology demonstration. McGean also provides personnel to assist in

the set-up and disassembly of demonstration equipment and on-site laboratory facilities to support the demonstration. McGean's contributions to the success of this program are reflected as in-kind match in the budget which accompanies this proposal.

McGean-Rohco is a supplier of metal finishing chemistry. As such, the equipment tested during the demonstrations will be provided by manufacturers other than McGean. A technical advisory committee will be established to select the technologies that will be demonstrated. This Committee will build on the plater/surface finishing committee that already exists within the Center. The current Committee has 10 industrial members. Additonal members will be added from national AESF Committees and from the USEPA. The goal of the committee will be to identify those techonlogies with the highest potential of reducing wastes within a metal finishing process.

It is anticipated that the technology demonstrations will be attended by approximately 20 people representing 10 to 15 companies per demonstration. The Center will establish a marketing program to advertise these demonstrations throughout the Great Lakes region by partnering with various pollution prevention organizations particularly those associated with the Great Lakes Regional Pollution Prevention Roundtable(GLRPPR). Even with these efforts it is anticipated that the demonstrations will draw a primary audience from the metal finishing community located within a 1 to 2 hour drive of Cleveland (aproximately from Erie, PA to Detroit MI).

The results of the demonstration will not be limited only to those who happen to attend the event. The Center will seek the widest distribution of results through a number of different channels. Each demonstration will be described in a 1 to 2 page Information Sheet that will be made available to interested parties in either hard copy or electronically through the Centers website. The Center will attempt to place articles in journals (Plating and Surface Finishing, Product Finishing, Finishing Management, etc.) and organization newsletters (AESF Sections, NAMF Sections, SME Sections, etc). The Center will also seek to present papers at various conferences such as the GLRPPR, the National Pollution Prevention Roundtable and the annual AESF/EPA Environmental Excellence Conference.

Since the actual application of pollution prevention equipment is extremely process specific, The Center submits this proposal under the assumption that the demonstration program will be substantially a qualitative demonstration rather than a rigorous quantitive demonstration. As such, there are no plans at present to submit a formal Quality Assurance Plan for this project. However, if EPA feels that a QAP is necessary the Center will develop one. Both the project schedule and budget would require revision if a formal QAP is requested.

SCOPE OF WORK

1.0 ESTABLISH TECHNOLOGY ADVISORY COMMITTEE

Build upon existing SBEAC Platers/Surface Finishers Advisory Committee (10 Industrial members) to establish a Technical advisory Committee for this Program. Add a representative(s) from relevent AESF Committees (Research or Pollution Prevention) and USEPA offices (GLNPO, Region 5 P2, NRMRL).

Duration: 1 month (Quarterly meetings throughout the Project)

Deliverable: Functioning Advisory Committee

2.0 SELECT TECHNOLOGIES FOR DEMONSTRATION

Working through the Technology Advisory Committee, develop a list of technologies that will be demonstrated during the project and a tenative schedule for the demonstrations.

Duration: 2 months, Month 2 and 3

Deliverable: List of technologies for demonstration.
Preliminary schedule for demonstrations

3.0 MARKETING ACTIVITIES

3.1 Establish marketing programs for local and regional audiences to attend the demonstration through interested organizations such as industry groups (AESF, NAMF, MFSA, SME, etc.), regulatory agencies (Regional Sewer District, Ohio EPA) and Regional Groups (GLRPPR and Great Lakes States P2 Offices).

3.2 Establish mechanisms for disseminating the results of technology demonstrations through information sheets periodicals, journals, websites, etc, on a local, regional and national basis.

Duration: 22 months. Beginning in Month 2 through Month 24.

Deliverable: Marketing Plan for securing audience for Technology Demnstrations by Month 4
Audiences at each Technology Demonstration (~20 people, 10-15 Companies)
Dissemination Plan for Technology Demonstration Results

4.0 TECHNOLOGY DEMONSTRATIONS

Stage one technology demonstration every other month beginning in Month 5. Each technology demonstration will present the following:

- a seminar on the technology in question that covers its function, its benefits, and implementation requirements and estimated costs.
- an operating demonstration of the technology
- a list of contacts of companies that provide the technology commercially

Duration: 18 months (beginning in Month 5 through Month 23)

Deliverables: 10 Technology Demonstrations
Attendee Lists from Demonstrations

5.0 DISSEMINATION

Disseminate the results of the Technology Demonstrations according to the plan developed in 3.2

Duration: 18 months (Month 6 through 24)

Deliverables: Copies of Information Sheets and Articles Published
URL's of websites containing links to the information.

6.0 PROJECT EVALUATION

Establish mechanisms for surveying participants in the technology demonstrations and those who access the results of the demonstrations to determine incidence of follow-through in implementing these technologies.

Prepare final summary report on the project and its results.

Duration: 19 months (Beginning in month 5 through month 24)

Deliverable:Summary Project Report indicating effectiveness of the demonatration series.

Project Milestones:	Dates:
Start Mo. from actual start in ()	07/2000
Advisory Committee Set-up (1 mo.)	08/2000
Technology Selection, Schedule (2 mo.)	10/2000
Marketing Activities (2 months & cont.)	09/2000
Tech. Demos (Mo. 5 to 23)	12/2000
Dissemination of Results (Mo. 6 to 24)	01/2001
Proiect Final Reporting (Mo. 24)	05/2002
Project End	06/2002

☒ Project Addresses Environmental Justice

If So, Description of How:

The proposed project addresses environmental justice in two ways. First, minority, Native American and low income individuals tend to experience a disproportionate exposure to contaminated fish through subsistance fishing by these communities. Activities to assist companies in minimizing or eliminating the discharge of heavy metals would relieve this burden.

Second, the finishing industry itself tends to employ a dispropoprtionate number of persons in the lower socioeconomic classifications. The pollution prevention activities demonstrated in this project, when implemented, would reduce the potential exposure of these workers to heavy metal containing waste streams during the course of their work day.

☒ Project Addresses Education/Outreach

If So, Description of How:

Educational and outreach opportunities are essential components of the effort. The demonstrations themselves and the accompanying seminars provide information the the participants directly. This result, while desirable, would not in itself justify the project. Broad dissemination efforts have been incorporated into the project in an effort to reach the largest secondary audience possible. These dissemination efforts will place the information generated into the hands of technical assistance providers and state P2 agencies as well as the metal finishers themselves.

Project Budget:

	Federal Share Requested ($)	Applicant's Share ($)
Personnel:	56,880	32,600
Fringe:	14,220	0
Travel:	6,000	0
Equipment:	5,000	0
Supplies:	2,000	0
Contracts:	4,000	0
Construction:	0	0
Other:	2,500	25,000
Total Direct Costs:	90,600	57,600
Indirect Costs:	42,774	0
Total:	133,374	57,600
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

The items indicated under the Budget Heading "Applicants Match" are explained in the following paragraphs.

The "Applicants Match" is anticipated to be in the form of in-kind services to the project. There are two types of match indicated - personnel and other.

Match indicated as Personnel is in three distinct categories. First, industrial participants in the Advisory committee will be donating their time to the project. This contribution is estimated to be no less than $12,600. Actual time spent and match amounts will be collected in signed statements from each participant at each meeting. Second, McGean-Rohco will donate the time of their Pilot Plant Technician during the set-up and disassembly of each technology demonstrated. It is estimated that each demonstration will occupy 4 pilot plant days (1 day to set-up, 1 day pre-test, 1 day demonstration, 1 day tear down). Actual records will be kept of the technician time used for each demonstration as a justification for match actually claimed. Third, McGean-Rohco will also provide analytical services for each demonstration. McGean has estimated the value for analytical services at $50 per sample. It is estimated that 8 samples will be analyzed during each of the 10 demonstrations. Again, records indicating the number of samples processed will be maintained for each demonstration to support the match acutally claimed.

Match indicated as "Other" represents the value of the facilities donated by McGean-Rohco for the demonstrations. We anticipate requiring the use of the Training facility for 1 day during each demonstration session. McGean estimates that the cost for the use of this facility is $500/day. It is also anticipated that the Pilot facility will be occupied for 4 days during each demonstration (as indicated in the paragraph above). This use of this facility is valued at $500 day by McGean.

Description of Collaboration/Community Based Support:

The SBEAC already has established collaboration efforts with a number of organizatoins particularly in the areas of outreach to metalfinishers and in dissemination of results. Articles concerning Center activities have already been published in various SME, AESF, and NAMF newsletters and magazines. Industry leaders from local suppliers and metal finishing shops currently participate on the Centers Advisory Committee. The local sewer district has participated in past Center activities both from the standpoint of learning as much as they could about technologies and from the standpoint of encouraging industrial participation.

The Center will also engage organizations within the Great Lakes basin that are interested in pollutin prevention and industry outreach. A focal point of these contacts wil be the Great Lakes Regional Pollution Prevention Roundtable (GLRPPR). The Roundtable will provide an efficient means of reaching P2 groups throughout the basin with information on the demonstrations themselves and as a means of disseminating the results of the demonstrations.

Formal collaboration agreements can be instituted, as necessary, once the proposed project is selected for funding.